

Smart Metering Implementation Programme: Rollout Strategy

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Target audience: Energy suppliers and network operators, consumers, consumer organisations and representatives, environmental bodies, meter asset providers, meter asset managers, meter operators and metering and communication equipment manufacturers, academics and other interested parties.

Overview:

This document is one of a number of supporting documents published alongside the Smart Metering Implementation Programme Prospectus.

This document assesses the options available to ensure that the rollout of smart metering across Great Britain successfully delivers its envisaged benefits. The document also considers how suppliers might be incentivised to complete the rollout.

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Context

The Government is committed to the rollout of electricity and gas smart meters to all homes in Great Britain and to the broad delivery framework underpinning the development of policy to date.

On behalf of the Department of Energy and Climate Change (DECC), Ofgem E-Serve has been managing the first phase of a central programme to design and implement new cross-industry arrangements for the delivery of smart metering. Ofgem E-Serve's smart metering work has been undertaken in conjunction with Ofgem's Sustainable Development Division.

The Prospectus represents the joint views of DECC and the Gas and Electricity Markets Authority (GEMA) based on the work conducted so far during the initial phase of the Smart Metering Implementation Programme ('the programme'). It sets out detailed proposals for consultation on the design and delivery of the smart metering system. Alongside the Prospectus, Ofgem is publishing a number of supporting documents which set out in more detail the alternative options considered.

Reflecting the approach adopted to date, the remaining work to scope the regulatory framework will be led by Ofgem E-Serve on behalf of DECC. Later this year, the governance and management arrangements for subsequent phases of the programme will be decided upon.

Associated Documents

DECC and Ofgem have jointly published the Smart Metering Implementation Programme Prospectus. This document is one of a number of Ofgem supporting documents published alongside the Prospectus.

DECC has also published updated impact assessments for the domestic and non-domestic sectors and a paper on disablement/enablement functionality for smart gas meters.

To help inform the programme, Ofgem also commissioned specific research (carried out by FDS) into consumer awareness of, and attitudes towards, smart metering.

All documents are available on the Ofgem website at the following location:

<http://www.ofgem.gov.uk/Pages/MoreInformation.aspx?docid=40&refer=e-serve/sm/Documentation>

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Summary

The Government's objective that smart meters should be rolled out to over 27 million households and many smaller non-domestic customers in Great Britain will be a major challenge for the energy industry. Moreover, delivery of the anticipated benefits of the Smart Metering Implementation Programme will require not just the physical installation of the meters and in-home displays. Key to the success will be the provision of advice and support to consumers to help them use the improved information from smart metering to better manage their energy consumption.

This objective is consistent with, and supportive of, the Government's overarching policy on energy efficiency – the Green Deal. Smart meters will help people better understand the energy they are using. It is envisaged that under the Green Deal there will be high-quality advice available to help householders make informed choices about energy efficiency measures and behaviour. In developing our proposals, we have considered how the rollout might be delivered in an efficient and effective way that, crucially, provides a positive consumer experience.

Energy suppliers will be responsible for the deployment of smart meters. We believe that, in the early stages of the rollout, suppliers should have broad flexibility over the pattern of their installations and to schedule activities efficiently. This will enable them to make progress with the rollout as quickly as possible. Enabling suppliers to respond to consumers who are actively interested in having a smart meter will be more likely to ensure that energy saving benefits are delivered. These "early adopters" can then help in spreading positive messages about smart metering and may help promote wider consumer engagement as the programme develops.

We recognise that throughout the rollout there may be real value in local co-ordination activity. Working with local authorities and local agencies can help give confidence to consumers about smart metering and should help suppliers gain access to premises to install the meters. Trusted third parties can also provide a valuable role in reinforcing the energy efficiency advice and support provided during rollout to help secure the benefits of the programme. This applies particularly in relation to vulnerable customers who may need most reassurance about the installation visit and additional support, including advice on additional measures to help manage their energy usage. Given these benefits, we expect suppliers to want to work with local groups. The supplier-led approach will allow these relationships to form in a way that should yield the greatest benefits, particularly in the early stages of rollout.

To drive the pace of rollout, suppliers will have an obligation to take all reasonable steps to install smart meters for their customers. We recognise that there may be technical and economic barriers to installing meters in certain places and that some customers may be reluctant to have a smart meter installed. However, we believe suppliers should have an incentive to try to resolve these issues and that the proposed obligation provides this.

We are also proposing that suppliers should have appropriate target profiles and reporting requirements to enable the programme to monitor rollout progress. The Government is keen to see an acceleration of the rollout of smart meters and the programme intends to set the target profiles at a level that is ambitious but achievable. These targets could be based on suppliers installing smart meters for a

percentage of their customer base during a particular year. If suppliers fail to comply with their licence obligations in relation to any such targets then the Authority may consider enforcement action. We will explore whether there is a case for special arrangements for small suppliers or for the non-domestic sector.

The programme will continue to investigate and review whether further measures could be introduced for later stages of the rollout in order to increase its effectiveness. Drawing on the analysis and evidence from the early stages of the rollout, the programme team may propose modifications to the rollout strategy where these would address issues identified or provide for enhanced benefits. To ensure it has the appropriate range of powers during the course of rollout, the Government may seek new powers in the forthcoming Energy Security and Green Economy Bill.

Positive consumer engagement is key to delivering smart metering benefits in terms of reductions in energy consumption and carbon dioxide emissions. During the next stage of our work we will be considering how best to promote this consumer engagement. Many stakeholders have suggested the potential value of a national awareness campaign although we will also be exploring other possibilities that could help to build consumer knowledge and awareness. We will also be considering synergies with the wider Green Deal as well as specific assistance for particular consumer groups such as the vulnerable.

There has been much discussion as to whether particular customer groups should be prioritised within the rollout. Requiring suppliers to prioritise certain groups would be expected to add to costs of the rollout as suppliers would have less flexibility to manage their plans as efficiently as possible. Moreover, there are some potential concerns with prioritising vulnerable customers during the early stages of the rollout and before fuller insight from the rollout is available and necessary lessons learned, and before necessary support can be given. Through a formal review process during the initial stages of the rollout the programme will decide whether there is evidence to support proposals to modify the rollout strategy to prioritise specific groups.

The industry already has considerable experience of exchanging meters when they reach the end of their useful life and there are already a range of protections in place to address issues that might arise. Nevertheless, we are aware that the installation of smart meters potentially raises new issues and hence have reviewed the range of protections that might be needed. One area of concern is the use of the installation visit to carry out what might be unwelcome sales activity. This issue is covered in more detail in the "Consumer Protection" supporting document.

We are also proposing to require suppliers to develop a code of practice, underpinned by a licence obligation requiring compliance with the code of practice. This would set out the details of what consumers could expect at the installation visit and help ensure that high standards are maintained.

As the rollout progresses we propose to monitor suppliers' progress and the consumer experience of the rollout. This will help ensure that the anticipated benefits of the programme are being delivered and if not, enable early action to be taken. We could expect to publish information on suppliers' performance to provide a further incentive to ensure that they are delivering a positive experience for their customers.

1. Introduction

Context

1.1. The Government has confirmed that energy suppliers will be responsible for the installation of smart meters. The potential role that local co-ordination could play in promoting positive engagement among local communities and generating the necessary awareness, enthusiasm and consumer take-up has been identified previously.

1.2. Smart metering will bring a number of benefits to consumers and the energy industry. These include improving customer service, promoting energy and carbon savings and facilitating smart grids. The successful rollout of smart meters goes beyond the installation of new metering and related equipment in homes and businesses. It requires action by consumers and changes by the energy industry to systems and processes in order to deliver its benefits. This document explores the options for the strategy for the rollout of smart meters across Great Britain and identifies key features of any approach, including the consumer experience, information provision and local co-ordination activities.

1.3. We expect that suppliers will look to deliver their rollout in a way that is efficient for their supply chains and customers. We also expect that suppliers will seek to differentiate their services to different consumer groups, potentially linking the smart meter with the provision of energy efficiency services or innovative tariffs.

1.4. During the course of this assessment we have held a number of workshops and discussions with stakeholders. We have also drawn on written submissions from stakeholders, consumer research¹ commissioned by Ofgem and other available public evidence.

1.5. In understanding the impact that different rollout strategies can have on the delivery of benefits we have sought to understand how different consumers can be expected to respond to improved information about their energy use. We have also considered what interventions may support them in doing so. The Government is co-funding, together with a number of energy suppliers, a major set of trials on different types of feedback intervention, the Energy Demand Research Project² (EDRP). We will look to input learnings from the trials to inform the programme development. No conclusions are available in time to inform our proposals at this stage.

¹ *Consumers' views of Smart Metering*, Report by FDS International, July 2010.

² Information on the EDRP is available on the Ofgem website (www.ofgem.gov.uk)

1.6. We have also sought to learn from other international smart metering programmes and trials. However, direct comparisons are often difficult due to different market structures³ and different energy consumption patterns including, for example, the prevalence of air conditioning.

Consumer experience

1.7. Over 40 per cent of the benefits of smart metering are expected to be delivered by consumers changing the amount of energy they consume or the time at which they use energy⁴. Encouraging and supporting consumers in taking action to reduce their energy use is essential to deliver these benefits. It is against this backdrop that the different options for rollout have been assessed.

1.8. There are many factors that will influence the way consumers respond to the information provided through the smart metering system, including:

- Their trust and confidence in smart metering;
- The information and communication they receive;
- Their attitude to environmental issues;
- Their household make up;
- Their household income;
- Their ability to make changes to their energy consumption;
- The interaction that they have with their energy suppliers; and
- The advice of friends and community groups.

1.9. Over the period of the rollout, consumers may have the opportunity to benefit from other carbon reduction initiatives from suppliers and other parties, including under the Green Deal. These initiatives may include:

- Local authority projects,
- Smart grids projects;
- Advice from third parties and
- National energy policies such as Feed-in-Tariffs and future energy efficiency targets⁵.

1.10. Where possible, the integration of such initiatives with the smart meter rollout could help build confidence in smart metering and could benefit consumers with lower costs and carbon savings.

³ In other countries metering is typically the responsibility of network companies.

⁴ *Impact Assessment of a GB-wide smart meter rollout for the domestic sector*, DECC, July 2010

⁵ Such as any successor to the Carbon Emissions Reduction Target (CERT).

Non-domestic consumers

1.11. The Government has also proposed the rollout of smart metering to smaller non-domestic sites⁶ (except where advanced meters have been installed or arrangements made to be installed before 2014). This group encompasses a wide range of sites including micro-businesses and sole-traders, smaller commercial premises, public sector buildings and small light industrial sites.

1.12. Smaller non-domestic customers often have identical meters to domestic customers and many services, like meter reading, are shared between domestic and non-domestic customers. In many areas, this means that the rollout of smart meters for non-domestic customers can take place alongside, and be integrated with, the rollout for domestic customers.

1.13. However, non-domestic customers have distinct needs and requirements. For example, energy use may be driven by business requirements such as working hours. As such, they may need different energy saving information and advice from that provided to domestic consumers. We expect the rollout to non-domestic customers to be closely integrated with the domestic rollout. Suppliers are likely to use the same supply chains and meter fitters to install meters for non-domestic and domestic customers, for example, and much of the supporting technology will be similar or identical. However, suppliers may build on and use this infrastructure in different ways (e.g. offering different value-added services). Non-domestic customers are also more likely to make metering arrangements directly with third party providers rather than it forming part of their contract with suppliers.

1.14. In the rest of this document, we consider the rollout for non-domestic and domestic customers together, noting where we see the need for distinct approaches for non-domestic customers.

Smart grids facilitation

1.15. Smart metering is an important step towards the development of smart grids, which have the potential to deliver improved distribution network efficiency and responsiveness. In turn, this will help to facilitate the increased use of renewable energy and electric and plug-in hybrid vehicles. The technical and system requirements to support smart grids are discussed in the "Statement of Design Requirements" and "Communications Business Model" supporting documents.

1.16. The rollout strategy for smart meters could have implications for any smart grids development, for example, if network operators require installations of smart metering within a particular area. We have therefore considered whether there is a need for any specific measures in relation to rollout in order to enable the development of smart grids.

⁶ Smaller non-domestic sites are profile classes 3 and 4 in electricity, and gas customers consuming less than 732MWh per year.

1.17. The policy, benefits and approach for implementation of smart grids within Great Britain are currently being assessed under other government programmes. This assessment is not yet complete and as such it is not possible to identify the full implications for the smart metering rollout. However, from published research it is possible to identify some of the potential developments that could have implications for smart metering:

- In proving and developing smart grid approaches, pilots and trials may be conducted in certain geographical areas during the smart meter rollout.
- A study conducted by Imperial College London together with the Energy Networks Association (ENA) identified the potential growth in charging of electric vehicles as a potential major impact on the electricity distribution infrastructure⁷.
- A paper published by the Energy Networks Strategy Group (ENSG) identified a number of significant network operator benefits from smart grids⁸. A number of these benefits are potentially enabled by smart meters, including distributed generation, demand response, loss reduction and outage management.
- A further paper for ENSG describes a route map for the implementation of smart grids, highlighting that during the period of the smart metering rollout a number of developments can be expected that will help to drive the case for smart grids including: expansion of renewable generation; some expansion of demand response; localised electrification of heating and transport; and an increase in distributed and microgeneration.⁹

1.18. Based on this, there may be a demand for the smart meter rollout to prioritise installations in certain geographic areas in order to support local initiatives including smart grids initiatives (such as distributed generation) and local authority initiatives (such as charging for electric vehicles).

1.19. The programme believes that enabling suppliers to respond to consumer and third-party (e.g. network operator) demand for smart meters has some specific advantages for the support of broader smart grids development, including:

- Electric vehicle take-up will be on an individual-by-individual basis and management of the associated services can be supported by a targeted installation of a smart meter;
- Outage benefits do not require full smart meters penetration within an area, but rather the ability to detect that some consumers have lost power within a locality;
- Uptake of demand response and time-shifting of consumption will be reliant on consumer behavioural change and preparedness to contract for such services, and thus taken on an individual-by-individual basis; and
- Uptake by high consumption and high variability consumers (particularly in the non-domestic sector) may provide more opportunity for adjusting and responding to network operator demand.

⁷ *Benefits of Advanced Smart Metering for Demand Response based Control of Distribution Networks*, ENA and Imperial College, March 2010.

⁸ *A Smart Grid Vision*, Electricity Networks Strategy Group, November 2009.

⁹ *A Smart Grid Route Map*, Electricity Networks Strategy Group, February 2010.

1.20. Many of the changes that will drive the need for smarter grids will involve consumers deciding to sign up to new services and may be dependent on smart meters being installed. For example, signing up to a demand management service may require agreement to a different tariff and installation of appropriate managed devices in the premises. These would require a smart meter to be operational.

Structure of this document

1.21. The remainder of this document is structured as follows:

- Chapter 2 looks at the different approaches that might be adopted in order to shape the rollout and promote engagement with consumers. It looks at the benefits that an area-based rollout can bring and analyses the potential consequences. It also explores ways that suppliers can be encouraged to work with trusted local bodies in order to engage consumers and how smart metering could work alongside the Green Deal and other initiatives.
- Chapter 3 looks at how consumers may be engaged so that they can realise the benefits of smart metering.
- Chapter 4 looks at what form of obligations could be placed on suppliers to deliver the rollout in a timely manner. We are keen to understand where there is scope for accelerating the rollout in line with the Government's ambitions and seek views on what rate of installation is achievable.
- Chapter 5 considers whether particular customer groups should be prioritised.
- Chapter 6 looks at the monitoring and governance required to enable rollout progress to be assessed.
- Chapter 7 considers whether additional consumer protections may be needed to deal with new issues associated specifically with the smart meter rollout. The chapter discusses the potential to require suppliers to develop an installation code of practice. It also discusses the scope for using satisfaction surveys, for example, to rate suppliers and help promote a positive consumer experience.

2. Approaches for Rollout

This chapter looks at the different approaches that might be adopted in order to shape the rollout and promote engagement with consumers. It looks at the benefits that an area-based rollout can bring and analyses the potential consequences. It also explores ways that suppliers can be encouraged to work with trusted local bodies in order to engage consumers and how smart metering could work alongside the Green Deal and other initiatives.

Question 1: Do you believe that the proposed approach provides the right balance between supplier certainty and flexibility to ensure the successful rollout of smart meters? If not, how should this balance be addressed?

Question 2: Would the same approach be appropriate for the non-domestic sector as for the domestic sector?

Question 3: Is there a case for special arrangements for smaller suppliers?

2.1. There are a number of factors that are likely to affect the rate and pattern of smart meter installation undertaken by suppliers. One factor is the number of consumers who request smart meters from their suppliers. There would appear to be significant advantages to harnessing this "customer pull".

2.2. A second factor is that a significant number of smart meters will need to be installed in order to replace existing meters that come to the end of their operational lives or for new properties. This will continue and account for a significant proportion of the rollout of meters to all properties. The rollout strategy needs to account for these new meter installations and meter replacement activities continuing, while planning to ensure the remainder of the meter population is upgraded by the end of the programme.

Meter replacements and new premises

2.3. The rollout of smart meters will involve the replacement of around 27 million electricity meters and 23 million gas meters. Currently around 10,000 traditional meters are installed every working day, amounting to 2.5 million installations per year. These installations are driven by a number of factors:

- New Builds – new meter installations take place at the rate of 400,000 per year;
- Electricity recertification and gas meter replacements – approximately five to seven per cent of the meter stock is replaced every year by the requirement to ensure that meters function properly and hence to replace old meters;
- Switching between prepayment and credit meters – where customers and suppliers choose to switch payment method between credit and prepayment, which requires a replacement of the meter; and
- Repairing meter faults – faulty meters are replaced with new meters; the majority of replacements occur due to faults with prepayment meters.

2.4. Evidence presented to us suggests that up until 2020, between 30 and 40 percent of all smart meter installations can be expected to take place because of one of these existing processes.

2.5. The current number of meter installers is matched to manage the existing levels of work. As a consequence of the introduction of smart metering, we expect that during most of the rollout period there will be an increase in workload and that there will need to be a corresponding increase in the meter installation workforce. The extent of any increase will depend on the target chosen for completion of the rollout.

Consumer experience of the rollout

2.6. As noted earlier, it is estimated that over 40 per cent of the benefits of smart metering will come as a result of consumers taking action to reduce (or shift) their energy use, in particular to the greater visibility they will have of their energy consumption.

2.7. How best to support consumers in making these changes is a central consideration in looking at different options for rollout. This chapter considers two specific aspects of this issue:

- The approach to local co-ordination and planning – how far this can be left to suppliers or whether a more mandated approach is required; and
- Mechanisms for general consumer engagement and the approach to providing consumers with the information and advice they need.

2.8. As context for this we start by looking at how we would expect consumers to respond to the rollout, recognising that different consumers will respond in different ways.

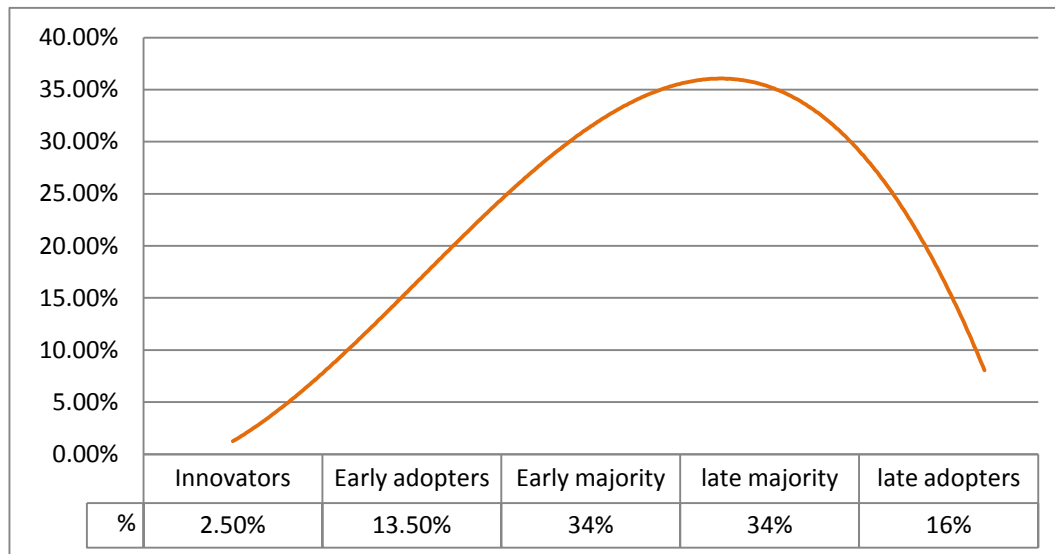
2.9. Consumers are central to the success of the smart metering rollout. They need to be willing to make time for the installation of a smart meter; willing to let an installer into their home; and willing and able to optimise their household energy consumption as a consequence of the information provided by smart metering, in particular through in-home displays (IHDs). There are various factors that influence consumers' willingness and ability to change their behaviour, including:

- Awareness – consumers need to be aware of smart metering, its potential benefits and, as a consequence, have an interest in engaging with smart metering;
- Confidence – consumers need to be confident that a meter and its installation will be safe and secure; and that they will be able to achieve potential benefits as a consequence;

- Information/support – consumers will need to understand how to use the IHD and smart meter and what actions they can take to affect their energy consumption¹⁰; and
- Opportunity – not all consumers have the same scope to change their consumption behaviour. Some consumers, particularly more vulnerable consumers, may have limited scope to cut down on their energy consumption or use energy at different times.

2.10. Consumer take-up of new products has been an active area of academic research and is generally recognised to follow the sort of adoption curve shown in Figure 1.¹¹

Figure 1 – Consumer take-up of new products



2.11. Within this adoption curve, different individuals respond to different influences to adopt new products. Some consumers will be innovators and early adopters and will actively seek to trial and use new products. These consumers are key influencers in the take-up of new products. Others may be very reticent and avoid or delay use for a considerable period of time, while there will be some consumers who may abstain from using the new product altogether.

2.12. The classic adoption curve is unlikely to apply fully in the case of smart metering because of the mandatory nature of the rollout and that around 40 per cent of installations are likely to be for reasons of replacements and/or new build. Therefore suppliers will, from the beginning of the rollout, need to consider the

¹⁰ Meetings with both the Consumer Advisory Group and Ofgem's Disability Advisory Forum have highlighted the importance of providing consumers with information and support. The EDRP trials have also emphasised its importance in delivering benefits.

¹¹ Adapted from Bohlen, Joe M.; Beal, George M. (May 1957), "The Diffusion Process", *Special Report No. 18* (Agriculture Extension Service, Iowa State College) 1: 56–77

different attitudes and propensity to engage with smart meters that customers will have and to bear in mind that customers with the characteristics of late adopters may well be some of the earliest that will have smart meters installed. The rollout strategy should ideally seek to ensure that innovators and early adopters can become advocates for smart metering, while ensuring that later adopters receive the support to see how the meters may benefit them individually.

2.13. Comparisons have been made between Digital Switchover¹² and the smart meter rollout. However, when Digital Switchover started around 85 per cent of households already had digital television installed¹³. At the moment there are a limited number of meters with smart functionality deployed in the domestic sector and our consumer research indicated a relatively low level of awareness among consumers. As a consequence there are additional challenges to be addressed before the majority of consumers can understand, accept and realise the benefits of smart metering.

2.14. Non-domestic customers are significantly more likely than domestic consumers to have had advanced metering installed as a response to commercial incentives to control energy costs. Many non-domestic customers have had advanced metering installed by metering agents and pay for their metering and data directly, rather than as part of a bundled package from suppliers. Domestic consumers have the choice to install their own meters, if they gain the acceptance of their supplier; however, this option is seldom exercised.

2.15. The rollout will need to account for consumers' readiness to make use of smart meters and for the needs of consumers in general and those of particular groups. For example:

- All consumers will need safeguards that ensure their safety and security, although these concerns may be especially relevant for vulnerable consumers;
- Consumers with specific access needs may require additional information and adjustments to the standard service to ensure that they are able to benefit fully from smart metering;
- Prepayment customers will need to be assured that existing payment services remain until their traditional meters are removed;
- Low-income consumers will need to be reassured that smart metering is able to help them manage their energy bills; and
- Non-domestic customers will need to be reassured that the rollout of smart meters will be sympathetic to business requirements.

2.16. The rollout will need to be sensitive to the needs of different groups of consumers such as those with particular access needs or other vulnerabilities. To address these areas of specific concern, we propose to introduce requirements for additional, specific consumer protections during the rollout. These are discussed in subsequent chapters and in the "Consumer Protection" supporting document.

¹² The nationwide change from analogue to digital television transmission. This process involves a region-by-region switch off of legacy analogue transmission aerials.

¹³ *Preparations for Digital Switchover*, Report by the National Audit Office, 27 February 2008.

2.17. Research by the Energy Savings Trust (EST) suggests that consumers who are interested in reducing energy consumption and choose the installation of a smart meter are more likely to take action to reduce consumption¹⁴. Modelling of take-up based on consumer demand also indicates a faster adoption curve for smart meters.

2.18. In addition, we believe that other initiatives will require consumers to choose or be provided with smart meters. These may include charging tariffs for electric vehicles, feed-in-tariffs, active demand management or other components of smart grids initiatives. Consumer take-up of the Green Deal and associated advice may also prompt them to seek early smart meter installation. These factors are likely to increase consumer pull.

2.19. Thus we believe that it will be important to enable suppliers to respond to consumer pull, particularly in the early stages of rollout. This should deliver benefits by supporting a range of programme objectives.

Local co-ordination and planning

2.20. It is recognised that strong positive engagement with the rollout programme among local communities could be particularly powerful in generating the necessary awareness, enthusiasm and take up for smart meters.

2.21. The involvement of trusted third parties, such as local authorities, housing associations or voluntary organisations, could give confidence to consumers about the rollout. The involvement of a trusted third party could help overcome any distrust in energy suppliers that consumers might have, making consumer engagement easier and increasing rates of access to customers premises. This could help to reduce suppliers' installation costs and thus help minimise the overall cost of the programme. The involvement of trusted third parties will also help reassure consumers and may help overcome specific language or cultural barriers.

2.22. However, an overly rigid approach would reduce supplier flexibility and could affect supply chains, increase costs and erode the overall business case (notwithstanding the potential to increase access rates and thereby reduce costs).

2.23. We have considered three broad approaches for planning and co-ordination of the rollout, each of which may have a role to play in different stages of the rollout:

- Market-led - suppliers have flexibility to develop their rollout plans;
- Local project-based - suppliers deliver their rollout plans but have obligations to support local initiatives within defined constraints; and
- Area-based - suppliers deliver focused rollout activities within areas specified by a common plan.

¹⁴ The Energy Saving Trust: Consumer Segmentation - UKBCSE Presentation.

2.24. Within each approach we have assumed that normal metering activities such as meter replacements and installing meters in new premises would continue across Great Britain. We have also accommodated the need for suppliers to respond to consumer demand for smart meters. The supply chain implications are discussed in Appendix 2.

2.25. Our assessments have been carried out based on a rollout completed by 2020. The Government wishes to accelerate significantly the rollout compared to previously published targets and is looking to the industry to examine all the opportunities for realising more ambitious but achievable targets. Any changes would alter the assumptions that have been made as to the costs and benefits of each approach.

Approach 1: Market-led implementation

2.26. Under this approach suppliers would have flexibility to define their own rollout plans and be responsible for prime contact with consumers. Suppliers would need to achieve defined rollout targets, but would choose how they meet these targets across the country.

2.27. In delivering their rollout plan, suppliers would have a range of choices to both differentiate their service and deliver efficiently, including:

- Establishing relationships with third parties, such as local authorities or the Energy Saving Trust, to promote consumer involvement and access;
- Co-ordinating with other initiatives, such as energy efficiency projects led by energy companies themselves in order to deliver both sets of objectives in an integrated and efficient manner; and
- Co-ordinating with each other to deliver efficiently in particular areas, for example, blocks of flats.

2.28. We would expect suppliers to make use of these approaches to help in meeting their targets and ensuring a positive consumer experience.

2.29. This approach has three potential significant benefits:

- Suppliers would have flexibility to reduce their rollout costs, for example, configuring their supply chains as they see efficient and appropriate.;
- Suppliers would have the opportunity to create differentiated and innovative services for consumers; and
- Suppliers would be able to respond to consumers that request smart meters early, thereby delivering benefits sooner and potentially providing role models for friends and neighbours.

2.30. However, suppliers' interests may not necessarily be aligned with consumer or broader industry interests, for example:

- A smart grids project may require the installation of smart meters in an area;

- Activity under the Community Energy Saving Programme (CESP) and other energy efficiency initiatives in a particular area may be managed by a different supplier than the one who needs to install a particular customer's meter; and
- A local authority may wish to focus on a particular area or consumer group.

2.31. We expect suppliers will look to work with third parties to take advantage of any publicity and momentum behind particular local initiatives and to ensure rollout targets are met. However they may not necessarily be as focussed on ensuring that the energy saving benefits are maximised. This is an area where third parties can play a valuable role.

2.32. Although a supplier-led rollout can enable efficiency and innovation, it may miss opportunities for alignment with third-party initiatives that could enhance the overall business case. The opportunity presented by such initiatives is likely to grow over time with the increase in focus on energy efficiency and the development of smart grids.

Approach 2: Local project-based initiatives

2.33. Under this approach, suppliers would have general flexibility to define their own rollout plans, be responsible for prime contact with consumers and for meeting their rollout targets. However, obligations would be placed on suppliers to manage their smart meter rollouts so as to support specific local projects or initiatives.

2.34. As discussed earlier, there are likely to be benefits from the involvement of third parties in the rollout in helping secure access and support customers in reducing their energy consumption. Moreover, other carbon reduction initiatives will be in progress across the country. These initiatives could include social landlord projects, smart grids or activities driven by wider policies. They may require smart metering to deliver their full benefits; or they may provide opportunities for delivering an improvement in energy reduction, thereby delivering additional benefits. Such initiatives could need the support of all major suppliers in the area to ensure that an integrated approach is taken.

2.35. It is not clear that such co-ordination would occur naturally. While there may be natural incentives that would encourage such activity, there are likely to be certain challenges:

- Ensuring in practice that all parties are informed of co-ordination opportunities, in time to enable arrangements to be put in place;
- Incentives for all affected suppliers may not align with suitable initiatives and hence it may not be possible to ensure consistent support; and
- Initiatives may seek involvement and investment from suppliers, but fail to make sufficient contribution in return.

2.36. To address these issues, under this approach there could be an obligation placed on suppliers to support specific projects submitted by third parties. Such an approach would need to establish: the timescales and submission process for

proposed projects; the governance and criteria for approval, taking account of expected costs and benefits; and the approach to establishing the commitments expected from third parties and suppliers. This process would also need to address the collective logistical and cost implications of proposed projects. For example, it is likely that there would have to be restrictions on the volumes of installations required from suppliers within given areas and timescales, taking account of other installation activities such as recertifications on suppliers' overall installation capacities.

Approach 3: Area-based co-ordination

2.37. Under this approach, suppliers would be obliged to meet targets to achieve a pre-determined level of installation in accordance with a common industry plan determined by the programme. Suppliers would be able to define their own rollout plans but only within the constraints of the common plan.

2.38. Normal installation activities, such as replacements and responding to consumer pull could continue to be conducted across all areas. The purpose of this area-based approach would be to create a greater level of community engagement to gain consumers' interest in delivering the benefits of smart metering.

2.39. An area-based approach would also provide a mechanism for involving third parties. For example, if local voluntary organisations were aware of the installation plans then they could become involved in providing additional consumer support and engagement. The involvement of such trusted third parties can potentially enhance the reputation of the installation activity and similarly increase access rates. The involvement of trusted third parties is also important in generating take-up of the wider Green Deal.

2.40. An area-based approach would also mean that meters would have to be replaced at a particular time regardless of the age of the meter. This would limit suppliers' ability to manage any stranding costs¹⁵ and could lead to customers who have only recently had a meter installed needing to have the meter replaced again.

2.41. An area-based approach could potentially have significant impact on the industry supply chain. The timing of an area-based approach is also important. The strongest case for using an area-based approach may come later in the rollout when there are likely to be a greater proportion of 'hard to reach' properties. This model consists of an initial period of supplier flexibility by a period of mandated area-based activity.

2.42. The implications of this model are that once the 'by area' part of the rollout is underway there may be constraints on the ability of suppliers to react to consumer demand and to carry out needed meter replacements.

¹⁵ The cost of a meter is often spread over the life of that asset. If a meter is replaced early then not all of this cost may have been recovered; this cost may be considered 'stranded'.

2.43. Some stakeholders have expressed the view that an area-based rollout should be mandated for overall efficiency and wider public benefits (for example, smart grids). We believe that one basis for mandating an area-based rollout would be if it was clear that the combination of efficiency savings and additional benefits for wider public policy outweighed the cost of the rollout model but the efficiency savings on their own were not sufficient for suppliers to adopt an area-based approach on their own initiative.

2.44. An area-based rollout could facilitate community interest to encourage take-up and delivery of consumer benefits. To achieve this, obligations may need to be placed on suppliers to establish local community engagement activities. It is not clear at this stage that specific measures are required to mandate an area-based approach to support smart grids. We recognise that under an area-based approach, the common industry plan would need to be carefully developed in consultation with all relevant stakeholders.

Proposed approach

2.45. We propose that, in the early stages of rollout, suppliers should have broad flexibility over the pattern of their installations (i.e. approach 1). In the early stages, the greatest benefits are likely to be achieved by focussing on early adopters and enabling consumer pull to shape the rollout. By definition, these consumers will be most engaged and predisposed to take action to reduce their energy use. This will then provide a sound basis for later stages of the rollout.

2.46. The programme team plans to review the progress of the rollout and evaluate the progress of the supplier-led rollout. This will look at suppliers achievement of the rollout target and the effectiveness of local co-ordination approaches. Through this review process, the programme may decide to propose that further measures should be used in order to increase its effectiveness and to secure the anticipated energy savings during later stages. The collection of relevant information will be essential to inform this review process. To ensure it has the appropriate range of powers during the course of rollout, the Government may seek new powers in the forthcoming Energy Security and Green Economy Bill.

2.47. Further measures could include amendments to ensure that specific local projects are supported. For example, measures could be proposed to introduce:

- A requirement to complete meter installations for a fixed percentage (including 100 per cent) of meters in a given geographic area (e.g. a housing estate or a council ward) by a particular time;
- A requirement to install meters for all customers who meet particular characteristics, such as the size of their energy consumption, if they own an electric vehicle, if they are on the priority services register or on a particular tariff, such as prepayment;¹⁶

¹⁶ Suppliers would need to have access to data that allows them to identify the members of a group.

- A requirement to support information programmes targeted on particular areas or customer groups, whether alongside requirements to install meters or not.

2.48. As the rollout progresses we expect suppliers will start to develop third party relationships for delivery. Also specific projects may emerge that require support from the programme (for example, if they support smart grids) and will help deliver the programme benefits. During the review process the programme will consider whether further measures to promote such projects should be proposed.

2.49. Some stakeholders have suggested that a widespread area-by-area focus could offer benefits by concentrating resources in an area, and allowing much closer coordination with local groups. The programme has not seen evidence that would justify imposing this type of approach at present. However, such evidence may appear during the rollout. The programme therefore considers that in the light of progress with the rollout there could be merits in adopting a common area-based plan for later stages of the rollout.

2.50. As part of the review process and in developing our thinking, the programme team will consider potential variations in approach for suppliers with low levels of customers in a particular area and the different needs of non-domestic customers. In parallel with this consultation the programme will evaluate whether any extra legislative powers are needed to support the review process.

2.51. If the introduction of local coordination measures or an area-based plan was adopted this would require additional governance for the programme to ensure that suppliers are only directed to projects that are expected to benefit the programme or to specify the areas to be targeted. This extra administration would have a cost implication for the programme.

2.52. We believe that our proposed approach would support an accelerated rollout profile and a staged approach to implementation. Signalling that at an appropriate time the programme will review the progress of the market-led rollout provides suppliers with clarity to begin making arrangements for carrying out the rollout.

Question 1: Do you believe that the proposed approach provides the right balance between supplier certainty and flexibility to ensure the successful rollout of smart meters? If not, how should this balance be addressed?

Question 2: Would the same approach be appropriate for the non-domestic sector as for the domestic sector?

Question 3: Is there a case for special arrangements for smaller suppliers?

3. Mechanisms for General Consumer Engagement

This chapter discusses the options for suppliers gaining access to customer premises and for increasing general consumer engagement with the smart metering programme in order to deliver the benefits case.

Question 4: What is the best way to promote consumer engagement in smart metering? As part of broader efforts, do you believe that a national awareness campaign should be established for smart metering? If so, what do you believe should be its scope and what would be the best way to deliver it?

Question 5: How should a code of practice on providing customer information and support be developed and what mechanisms should be in place for updating it over time?

3.1. As discussed in the previous chapter, the level of consumer acceptance of smart metering will have a fundamental impact on the costs and benefits of the programme. If consumers are resistant to smart meters then access to premises will become difficult - increasing costs - and benefits will not be delivered through consumer behavioural change. Alternatively, positive consumer acceptance would make access easier - reducing costs - and would help ensure the delivery of benefits.

3.2. The level of consumer acceptance of smart metering is therefore a key driver of the efficiency of the rollout. Low access rates would result in repeat visits and lost time for meter installers. We have estimated that an access rate of 30 per cent would result in around £383 million of additional costs compared with an access rate of 60 per cent.

3.3. Several suppliers and consumer groups have expressed the view that the introduction of a trusted brand and common approach to consumer engagement would have beneficial effects on the rollout by building consumer confidence and increasing access rates. Any brand developed for these purposes would need to avoid confusing consumers and could link to the branding of related initiatives such as the Green Deal.

3.4. As well as promoting the initial acceptance of smart metering there will be a need to help some consumers to understand how they can use the information provided by the meters to better manage their energy consumption. A number of stakeholders have suggested that to deliver effective energy savings the programme needs to integrate its awareness messages with other initiatives, such as the work carried out under the 'Act on CO₂' campaign. It may also be important to link with awareness messages relating to the wider Green Deal. However, there are other possible approaches and delivery routes that should also be considered.

3.5. During stakeholder workshops earlier in the year, there has been general agreement on the potential benefits of a common, national awareness campaign to help build consumer trust and engagement and to help increase access rates. The Digital Switchover programme has been cited as an example model to follow. The

programme involves two activities. Digital UK provides generic national marketing as an independent organisation and the Digital Help Scheme focuses on reaching the 'hard to reach' 20 per cent of consumers.

3.6. There are a number of possible ways to help promote consumer engagement. During the next phase of the programme we will be looking at this in more detail. However, we are keen to explore the overall potential for a common approach and are therefore at this stage seeking views on two potential approaches that would enable a common brand to be established:

- Approach 1: A co-ordinated approach to consumer engagement whereby suppliers establish a code of practice for marketing activities; and
- Approach 2: An independent national awareness campaign.

3.7. These two approaches are not the only ways to promote consumer engagement. They are not mutually exclusive and under both models suppliers would be able to conduct their own sales and marketing activities.

Approach 1: "Co-ordinated" approach to consumer engagement

3.8. Under this option, suppliers would establish a code of practice for marketing activities and an associated "smart metering brand". Industry participants would use this brand in communications with consumers (for example, a logo for installers).

3.9. Suppliers would be obliged to comply with standards set out in the code of practice, which would be underpinned by licence obligations. Suppliers' marketing activities would need to meet the code of practice. For example, the code of practice could stipulate the benefits that could be claimed for smart metering and any marketing activities would have to align with these benefits.

3.10. The advantages with this approach are that it would provide suppliers with flexibility to define and deliver their own marketing campaigns, while ensuring some consistency of approach through a set of common messages. Similarly, the establishment of a common brand would provide opportunities to build consumer confidence on installation.

3.11. However, this model has some weaknesses:

- Co-ordination with third party campaigns (such as EST and local authorities) would be on a bilateral basis through suppliers; and
- It would be difficult to produce a programme-wide response to media interest.

Approach 2: An independent national awareness campaign

3.12. Under this approach an independent national awareness campaign body would be tasked with developing a programme of awareness raising activities to promote

consumer awareness and confidence in smart metering. The campaign body might for example seek opportunities to integrate smart metering marketing activities effectively with broader government energy efficiency initiatives – using these other routes as channels to market to increase awareness of smart metering. It might also support local and regional initiatives (e.g. by local authorities). The campaign body could:

- Create a "smart metering brand";
- Run a consumer engagement campaign to build confidence and understanding among consumers around the introduction of smart metering;
- Make available reliable information on actual levels of benefits achieved;
- Provide a programme-wide perspective in reaction to media interest;
- Integrate messages with other campaigns (such as the Green Deal) to exploit other common channels; and
- Provide common supporting briefing and information to interested third parties.

3.13. Suppliers would continue to operate their own sales and marketing campaigns in parallel with the national awareness campaign.

3.14. The strengths of this approach are that it would:

- Establish a consistent smart metering messaging;
- Assist the industry in engaging and leveraging third party activities;
- Promote consumer awareness and confidence; and
- Provide opportunities to exploit synergies with broader energy efficiency messages and thus enhance the smart meter brand.

3.15. Based on a comparison with Digital UK funding, we estimate such a campaign body could require up to £100 million over the timescale of the programme. However, the cost would obviously depend on the scope and nature of the campaign body and would be expected to be offset by a range of potential benefits from its activities. These issues are discussed in more detail in Appendix 3.

Proposed approach

3.16. Positive consumer engagement is key to delivering smart metering benefits in terms of reductions in energy consumption and carbon emissions. The next stage of work will include an investigation of initiatives to promote engagement, such as activities to build consumer knowledge and awareness, and how the programme could assist particular consumer groups such as the vulnerable. This will include analysis of the potential approach to campaign initiatives at national and local levels and linkages with the approach to marketing in the wider Green Deal.

3.17. As part of broader efforts to promote consumer engagement, we believe that there could be benefit in a national awareness campaign; however, we recognise that the potential scope of a campaign and the body delivering it could vary widely. The campaign could focus on creating awareness and confidence in smart metering or could also be targeted at encouraging consumers to change their energy

consumption patterns as part of joined-up approach with other initiatives such as the Green Deal. There are also a number of mechanisms by which any campaign could be run; in particular, the responsibilities for organising and funding would need to be decided.

3.18. During the next stage of work, the programme team will explore more fully what actions are most likely to maximise awareness of smart metering and how these align with enabling consumers to change behaviour. This work will draw on existing evidence and expert views. The programme team will also assess whether there is any need for additional research and commission this as appropriate.

Question 4: What is the best way to promote consumer engagement in smart metering? As part of broader efforts, do you believe that a national awareness campaign should be established for smart metering? If so, what do you believe should be its scope and what would be the best way to deliver it?

Information provided by suppliers

3.19. In addition to any national campaign aimed at raising consumer awareness, we envisage that suppliers will need to provide more detailed information and advice on energy efficiency to individual customers as part of the rollout. One key point where this will occur is at the point of installation.

3.20. Information and advice may not only be beneficial when smart metering equipment is being installed into a property, but also at a later date. Some trials indicate that follow-up information weeks or months after installation can have a positive impact in delivering consumer benefits. Consumers moving into a property with a smart meter may also require information and advice if they have not had a smart meter or IHD before.

3.21. It is likely that some form of consumer information and advice will be necessary to deliver smart metering benefits. We propose to oblige suppliers to comply with a code of practice that defines the minimum standard of information provision for domestic customers. This code of practice would establish the minimum information and support required, but not the delivery method. We consider that the same approach could be taken for non-domestic customers. Suppliers would be able to select how they deliver within this code of practice and decide what additional information and support they may wish to provide. This code could form part of the wider code of practice for installation discussed in Chapter 7 of this document.

3.22. The code of practice would need to cover:

- Information provided before, during and potentially after the time of installation;
- Training provided in using IHDs and meters; and
- What advice might be given to consumers by the meter installer.

3.23. It will also be important that customers who are keen to make additional efforts in energy efficiency can find information to help them, and so the code of practice should also oblige suppliers to make clear where customers can find that information, building on suppliers' existing licence obligations to provide energy efficiency advice.

Question 5: How should a code of practice on providing customer information and support be developed and what mechanisms should be in place for monitoring and updating it over time?

4. Obligations on Suppliers to Complete the Rollout

This chapter looks at what form of obligations could be placed on suppliers to deliver in a timely manner. This includes consideration of the approach to setting targets for suppliers..

Question 6: Do you agree with the proposed obligation on suppliers to take all reasonable steps to install smart meters for their customers? How should a completed installation be defined?

Question 7: Do you think that there is a need for interim targets and, if so, at what frequency should they be set?

Question 8: Do you have any views on the form these targets should take and whether they should apply to all suppliers?

Question 9: What rate of installation of smart meters is achievable and what implications would this have?

4.1. The Government has confirmed its intention to mandate the roll out of electricity and gas smart meters to all homes in Great Britain and that suppliers will be responsible for the deployment of smart meters. It has also signalled an ambition to accelerate the rollout against previously identified plans so that the benefits of the programme can be realised earlier.

4.2. There are a number of important questions about how such obligations are framed, which will determine how rollout is delivered. This chapter considers what the nature of the obligation on suppliers should be; whether there should be any exceptions to the rollout mandated; and whether interim targets are needed.

4.3. This chapter considers the approach to delivering the rollout target for domestic customers. The approach for non-domestic customers is considered in the "Non-Domestic Sector" supporting document.

4.4. The "In-Home Display" supporting document considers the obligations around the provision of an IHD. We are proposing that suppliers should take all reasonable steps to provide an IHD to all domestic customers and if the customer initially declines one there would be an obligation to provide an IHD, if requested, for up to a year afterwards. This chapter focuses specifically on the provision of the meter together with associated communications equipment.

Completion of the rollout

4.5. Some stakeholders have suggested situations in which it may not be technically feasible or economically viable to install a meter. Examples include situations where

a wide area network (WAN)¹⁷ communications link is not available at or close to the meter, or where additional building work is required to make space for a smart meter or to make the area safe. This could lead to meter installations where the economic benefits of installing a smart meter would be outweighed by the costs and could mean that some customers are excluded from smart metering.

4.6. The EDRP trials have provided valuable learning experience to suppliers on the technical challenges of installing smart meters, over and above the challenges with traditional meters. In most trials, suppliers have been able to complete the vast majority of meter installations. Over time, we would expect industry to develop cost-effective solutions to many of the remaining problems. We also note that the industry finds it hard to assess the number of meters that could be problematic, given the poor quality of meter location data for these purposes.¹⁸ Better data collection by meter readers over the next few years may help in this regard.

4.7. Our proposed approach to achieving the rollout is to oblige suppliers to take all reasonable steps to install smart meters and associated equipment to all domestic customers by a target date yet to be specified. We are proposing that this would be subject to an "all reasonable steps" test, which acknowledges that there may be cases where installation may not be possible notwithstanding that all reasonable steps have been taken, for example there may be instances where consumers refuse to grant access to the property to replace the meter.

4.8. Under existing legislation, suppliers are able to apply for a warrant where they need to access a property to replace a meter. However, we would not expect suppliers to apply for warrants simply to install smart meters. Warrants would only be sought where currently it is necessary for other reasons. These could include where they have not been able to carry out a necessary safety check, or they have reasons to suspect meter tampering.

4.9. We do not currently envisage any specific exemptions for particular customer groups or installation types on technical or economic grounds. We believe that the industry will be able to develop solutions that would overcome most current problems. Nevertheless in judging whether a supplier had taken all reasonable steps to achieve the targets we would take any technical or other constraints into account. We would welcome views on this proposed approach.

4.10. In setting the targets, the definition of what constitutes a completed installation will need to be defined. The definition should, ideally, refer to a customer using a smart meter, with an active home area network (HAN)¹⁹ and WAN link and that the consumer has received appropriate formation and support at the point of installation. We will consider further how to deal with customers who receive smart

¹⁷ The smart metering WAN will be used for two-way communication between smart meters and DataCommsCo (via the WAN communications module in the customer's premises).

¹⁸ The data that is collected today on meter location is not suitable for assessing the difficulty of completing an installation as it is designed to help meter readers find meters once they are already on location.

¹⁹ The HAN provides the communication between the meters, communications hubs, IHDs and any load control devices in customer premises.

meters before DCC is operational or situations where customers do not wish to receive an IHD.

Question 6: Do you agree with the proposed obligation on suppliers to take all reasonable steps to install smart meters for their domestic customers? How should a completed installation be defined?

Targets for smart meter rollout

4.11. In order to provide the right incentives for suppliers and additional certainty about progress during the rollout, we have considered two broad approaches for the obligation to be placed on suppliers:

- An obligation on suppliers to achieve a target for the completion of the rollout; and
- An obligation on suppliers to achieve an appropriate target profile leading to completion of the rollout.

4.12. The strengths and weaknesses of these approaches are considered below.

Option 1: Target for completion of rollout

4.13. Suppliers have made clear that they wish to have maximum flexibility to plan and deliver the rollout. This would enable them to manage their supply chains and investment profile efficiently. Suppliers might be expected to focus investment in the early stages of the rollout on installations that deliver the most benefit for their businesses. However, there is no guarantee that suppliers would naturally choose the rollout profile that delivers the most benefits for the programme. There is a risk that supplier investment priorities would create a rollout profile that delays overall benefit delivery. In particular, suppliers could choose to:

- Leave the majority of installations until the latter half of the rollout period;
- Focus on meter installations that deliver supplier benefits but not consumer benefits; or
- Delay the delivery to certain consumer groups, for example, rural customers.

4.14. Having a single obligation around completion of the rollout is complicated by the fact that consumers will be continuing to change suppliers. This will create the need for a set of arrangements for how to deal with such cases. There could therefore be unintended consequences for retail competition.

4.15. Placing a reporting obligation on suppliers would allow monitoring and provide reputational pressure on companies. However, it would not allow the programme to take any action in the event that some suppliers were falling behind or if other concerns were identified. In addition, DCC would have no clarity over the volume of meters it would have to service at any given time. This could lead to inefficient

procurement of data and communications services, which would increase costs for suppliers and, ultimately, consumers.

Option 2: Interim targets

4.16. An alternative approach would be to establish a set of interim targets for smart meter rollout. It is envisaged that each interim target would consist of a minimum target expressed as a cumulative percentage of customer base. The targets and associated profile would be set out within licence conditions. If a supplier was not meeting their licence obligations with respect to the interim (or final) targets the Authority would be able to take enforcement action.

4.17. This approach would enable the programme to set interim targets that would protect the overall benefit delivery profile and minimise the risk of suppliers delaying investment. The targets would impose some constraints on how suppliers plan their investment profile, and may drive them to bring forward investment decisions, potentially having a slight impact on cost. The targets would also have the advantage of providing DCC with an expected volume of meters to service.

4.18. There are a number of options as to how frequent the interim targets should be (for example, annual targets) and the date for the first interim target.

4.19. There is also the option as to whether the licence obligation should apply to all suppliers or just larger suppliers. Smaller suppliers will be more affected by fluctuations in customer numbers and could be particularly exposed if they lose customers who have smart meters already. Smaller suppliers often do not have their own meter installation businesses. It may therefore be more proportionate for smaller suppliers to have less frequent targets to reflect the smaller number of meters involved. Exempting smaller suppliers from the interim targets would give them more flexibility in negotiating contracts or allow them to train their own meter fitters. We would welcome views as to what the impact would be for small suppliers if the targets were industry wide.

4.20. Any obligation would be expressed as a proportion of the supplier's customer base that is using a smart meter at the end of each compliance period, rather than on the basis of the number of installations achieved. Such targets would be specific to suppliers and as such would not be tradable. This approach does expose suppliers to some risk from customer switching (a supplier may install meters for its own customers, but may subsequently lose some of these and acquire new customers without smart meters). However, we are not persuaded that the additional complexity of allowing for trading or other adjustments is justified if annual targets are adopted.

Way forward

4.21. Decisions on the approach to requiring suppliers to complete the rollout will be taken in the light of overall programme targets. In doing so, there will be a balance to be struck between providing sufficient flexibility for suppliers to meet their

obligations in an efficient and effective manner, and providing the programme with sufficient certainty around progress towards completion of the rollout.

4.22. In line with the Government's ambition to accelerate the progress of rollout we welcome evidence on the rollout profile that could be achieved by suppliers and what would be an ambitious but achievable completion date.

Question 7: Do you think that there is a need for interim targets and, if so, at what frequency should they be set?

Question 8: Do you have any views on the form these targets should take and whether they should apply to all suppliers?

Question 9: What rate of installation of smart meters is achievable and what implications would this have?

5. Prioritisation of Specific Consumer Groups

This chapter considers whether particular customer groups should be prioritised within the smart meter rollout.

Question 10: Do you have any evidence to show that there are benefits or challenges in prioritising particular consumer groups or meter types?

5.1. One of the issues considered by the programme team is whether there should be any requirements placed on suppliers in terms of the order in which particular types of consumers receive their smart meters.

5.2. The approach proposed in Chapter 2 is for a market-led deployment, at least initially. This would allow suppliers to prioritise individual consumers who request early installation, and those included in local projects, such as energy efficiency and smart grids-related initiatives, which suppliers choose to support. This should help ensure that many of the programme's benefits will be realised early.

5.3. Beyond this, it is possible to identify general categories of consumers for whom it could be argued that early delivery of smart meters (or at least not being left to the late stages of the rollout) would help to deliver the programme benefits or wider environmental or social objectives, including:

- prepayment customers may see benefits from reduced tariffs and greater flexibility in payment options;
- non-domestic consumers use significantly more energy on average than domestic consumers, so are predicted to deliver increased savings per meter; and
- consumers in fuel poverty may benefit from better information on their energy consumption.

5.4. In addition, suppliers may obtain economic benefits from prioritising certain types of meter. For example, prioritising the replacement of existing prepayment meters may reduce any need for parallel running of existing processes and systems. Suppliers may also want to prioritise replacement of other meter types. For example, as some meters are reliant on a 'teleswitch' signal that is due to be decommissioned in 2014, suppliers may decide to use smart meters as replacements.

5.5. Prioritisation of the replacement of certain meter types, in particular prepayment meters, could be driven by individual suppliers. However, industry would need to work together to ensure that supporting infrastructure changes, such as mechanisms to purchase credit, are implemented effectively and do not disadvantage certain consumers.

5.6. Further prioritisation requirements could impact the delivery of the business case in a number of ways:

-
- Increasing or reducing benefit by either accelerating or decelerating installation to consumers with high potential to benefit from smart metering;
 - Increasing or reducing cost, for instance by placing demands on supply chains;
 - Positively or negatively impacting on consumer experience, for example by expecting certain consumers to adopt smart meters early on in the rollout, regardless of their level of demand. Consumer representatives have expressed concerns that certain consumer groups will require additional support in understanding and using a smart meter in their home; and
 - Adding complexity, for instance by requiring suppliers to target a consumer group that is difficult for them to identify (e.g. suppliers cannot specifically identify all customers who are fuel poor).

5.7. The nature of these implications will be dependent on the consumer group chosen. Appendix 4 sets out analysis of the potential impact of prioritising specific consumer groups on the business case for the smart metering programme. The three scenarios considered are summarised below:

- Prioritising the replacement of prepayment meters – we have considered a number of models for such a rollout and concluded that different models have little impact on the net present value (NPV) of the benefits case for the rollout of smart metering;
- Prioritising high energy consumers such as non-domestic consumers, which would result in early delivery of these benefits and hence a higher NPV; and
- Prioritising of consumers classified as fuel poor – it is not possible to model quantitative benefits due to the wider problem of identifying these consumers.

5.8. At this stage we are not proposing to prioritise any particular groups but will keep this under review. We would be interested in stakeholder views on any additional evidence on the benefits of prioritisation for any specific consumer group. In particular we would welcome views and evidence on whether prioritisation of prepayment meters would be valuable to both industry and consumers.

5.9. The further development of policy on this subject will also need to take account of the range of alternative options for achieving a degree of customer group prioritisation. These include the development of specific initiatives or projects supporting the installation of smart meters that benefit specific customer groups and the potential scope for engagement activities to preferentially target specific groups or areas.

5.10. If it were difficult for suppliers to identify consumers that should be prioritised then it may be necessary to provide an additional mechanism to enable the process. Options to address this include voucher schemes to promote smart meters that could be facilitated by third parties or the information from Department of Work and Pensions.

Question 10: Do you have any evidence to show that there are benefits or challenges in prioritising particular consumer groups or meter types?

6. Reporting Arrangements

This chapter considers the monitoring arrangement required to enable rollout progress to be assessed.

Question 11: Do you agree with our proposed approach to requiring suppliers to report on progress with the smart meter rollout? What information should suppliers be obliged to report and how frequently?

Reporting on progress

6.1. In order to ensure transparency around the rollout, we propose to oblige suppliers to report and publish each year the number of their customers who have smart meters, and those who still have traditional meters.

6.2. Detailed reporting will help inform the programme's ongoing review of progress with rollout. Examples of the sort of information that suppliers could be required to report on installation against include:

- What category of customer they have installed meters for (e.g. prepayment);
- What areas they have installed meters in;
- Whether the installation was carried out as part of a specific trial, initiative or local project; and
- Whether the installation was at customer request or was a supplier-initiated meter exchange.

6.3. This approach will also allow stakeholders to compare the progress of different suppliers and understand installation rates for, say, prepayment customers or particular geographic areas are different from other suppliers. We consider that this transparency should encourage suppliers to plan and deliver flexible rollout profiles that are in the interests of customers.

Cost and benefit reporting

6.4. In order to assess the overall business case for smart metering effectively we propose that reporting will be required of information relevant to understanding the net supplier costs of their roll-out activities. The format of this reporting will be developed by the programme to ensure consistency across suppliers.

6.5. A key part of delivering the benefits case will be monitoring the benefits that are achieved. While suppliers have strong incentives to monitor supply cost savings and ensure that they are achieved, the same is not necessarily true with respect to the energy savings and other benefits achieved by their customers. The programme team is considering measures that would ensure that high-level information about the level of benefits consumers have realised will be reported and available for assessment by the programme.

6.6. The installation of smart metering may trigger other changes, such as where a customer installs insulation based partly on their increased energy awareness due to smart meters. It therefore may be difficult for suppliers to attribute energy savings solely to the installation of smart metering. The programme team will do further work alongside this consultation to determine the precise information to be collected and the mechanism for measuring the benefits attributable to the smart metering programme.

Question 11: Do you agree with our proposed approach to requiring suppliers to report on progress with the smart meter rollout? What information should suppliers be obliged to report and how frequently?

7. Consumer Issues

This chapter provides an overview of a number of consumer issues associated with rollout and how they could be dealt with, including through an industry code of practice on the installation process.

Question 12: Do you agree that there is already adequate protection in place dealing with onsite security or are there specific aspects that are not adequately addressed?

Question 13: Do you agree with our proposal to require suppliers to develop a code of practice around the installation process? Are there any other aspects that should be included in this code of practice?

7.1. There are a range of legal protections that already exist covering the safety and security associated with meter installation visits, sales and marketing activities, and particular protections for vulnerable customers.

7.2. We recognise that the rollout of smart metering may raise a number of new issues. For example, the provision of an IHD and information about uses that can be made of smart meter data will involve more consumer contact and potentially access to areas of the house that would not be required for a routine meter replacement.

7.3. This chapter considers the potential need for additional protections in a number of areas:

- Security concerns around the installation visit;
- Health and safety issues;
- Billing errors;
- Technical co-ordination between suppliers and networks; and
- Special assistance for vulnerable customers.

7.4. Sales and marketing activities undertaken during meter installation visits is discussed in the "Consumer Protection" supporting document.

7.5. While we expect that some high-level protections will need to be incorporated in licences, we also see this as an area where supply licensees can take a lead in developing a code of practice setting out in more detail what consumers can expect during the installation visit. We set out below our thoughts on how this could be progressed.

Ensuring consumers' security

7.6. Consumer groups have raised concerns about the possibility of bogus installers or distraction burglaries associated with the rollout. We note that these are issues

that already exist in the context of current meter reading and meter replacement activities. There are a range of protections in place in statute and licence that require, for example:

- All installers to be "fit and proper" people;
- Identification to be worn at all times; and
- Password schemes to be in place for vulnerable customers who are concerned about providing access.

7.7. We do not consider that the differences in visit requirements for smart meters require any further protection in supply licences. However, we would encourage suppliers to consider any additional practical steps they would take and which could be included in the proposed code of practice (discussed below). These might include a commitment to always provide advance notification of an installation visit and make appointments and liaison with local agencies where significant replacement activity is planned in an area.

Question 12: Do you agree that there is already adequate protection in place dealing with onsite security or are there specific aspects that are not adequately addressed?

Overcoming installation issues

7.8. During current ongoing meter replacement activities problems are uncovered at meter sites that require more significant rework activities, for example:

- Electricity metering back-boards that contain asbestos and require replacement;
- Problems with the safety or capacity of supply;
- Energy theft; and
- Safety problems with consumer appliances, in particular gas appliances.

7.9. Resolving these problems may require network operators to be involved or require the customer to take action themselves. If they are not resolved, these problems can have a significant impact on customers. For example, where safety problems are found, metering agents may be legally obliged to disconnect the customer's supply. To minimise the impact, industry needs to find ways to anticipate problems and respond quickly when they occur. For example, stakeholders have suggested that network operators could have "rapid response" teams working locally that installers would contact if they come across problems.

7.10. Although these are often "business as usual" problems, in the sense that they occur during the replacement of traditional meters as well, the accelerated replacement associated with smart metering would increase the rate at which such problems are uncovered. Given the potential customer impact, it is important that practical solutions are found. The Health and Safety Executive (HSE), have stressed the importance of ensuring that meters are installed safely and by competent

operatives. We will continue to liaise closely with the HSE as our thinking develops to ensure that any safety concerns are addressed.

7.11. The introduction of smart meters has the potential to lead to some new issues, for example where a semi-concealed meter cabinet is too small to fit a smart meter or where it may be unsafe to install electrically-powered equipment for a gas meter installation.

7.12. We note that the industry is aware of these problems and recognises the need to find ways to overcome them in order to allow the rollout to progress smoothly. Therefore, work needs to begin soon to understand the types of problem that could arise, how prevalent they are, and the practical solutions required to resolve them. This task is made harder by poor data around meter location, as discussed earlier. One option is that manual meter readers could start recording better data on meter locations from now on.

7.13. To assist in resolving these issues, the programme team proposes to work closely with suppliers, metering agents, network operators and others to facilitate work on these issues. This work will continue as required to identify the current process changes and future actions needed to address specific problems and then propose changes to industry working practices and codes. Depending on the outcomes, there could be changes to the Meter Operator Code Of Practice Agreement (MOCOPA), Ofgem-Approved Meter Installer (OAMI) Codes of Practice and the Meter Asset Manager's Code of Practice (MAMCoP). There could also be an option of including obligations within the Smart Energy Code²⁰ to define working arrangements between networks and suppliers if necessary.

Billing and meter errors

7.14. The installation of a smart meter may bring to light errors with existing meters or bills. For example, there may be instances of inaccurate billing or crossed meters, whereby a supplier has been billing a customer based on meter readings taken from another customer's meter. Again, this is an issue that can arise with traditional meter replacements but is likely to occur more frequently with the faster rate of replacement associated with the rollout of smart meters. Suppliers will need to ensure their processes for dealing with such issues are robust.

7.15. The rollout provides an opportunity to identify and resolve such errors. We also note that in response to the super-complaint on billing processes made by energywatch in April 2005, Ofgem called on energy suppliers to end back-billing beyond a year from July 2007.²¹ Subsequently, the Energy Retail Association (ERA) introduced a Code of Practice for Accurate Bills in 2006, which five of the Big 6 energy supply companies have signed up to. The Code includes a requirement,

²⁰ We propose to introduce a new Smart Energy Code as part of the governance arrangements for the operation of the smart metering system. More details are set out in the "Regulatory and Commercial Framework" supporting document.

²¹ Ofgem's response to the super-complaint on billing processes made by the Gas and Electricity Consumer Council ("energywatch"), July 2005.

where the supplier is at fault, not to back-bill consumers beyond 12 months from the date of any subsequent bill. In addition, this principle could also be reflected in the code of practice for smart meter installation.

Technical co-ordination between suppliers and networks

7.16. More generally there are a number of issues that relate to the practical implementation of the smart meter rollout, such as the potential need for a common technical solution for WAN communications within blocks of flats; the skills and training arrangements for meter installers; and the co-ordination of common services such as prepayment payment services. These are all important issues in terms of ensuring a positive customer experience.

7.17. Installing meters in blocks of flats can be technically difficult if meters are underground away from the customer's home, making access to WAN and HAN signals difficult. Solutions may require co-operation between suppliers by, for example, installing common communications enhancement equipment to improve signal quality.

7.18. The programme team will engage with industry in order to ensure that, before rollout commences, work is undertaken to:

- Address common technical problems such as communications in blocks of flats, common meter stock problems and issues with specific property types;
- Identify effective standards and training arrangements for the efficient and flexible development of installation resources; and
- Co-ordinate the implementation or decommissioning of shared services, for example current prepayment payment services or teleswitch arrangements.

7.19. We believe that these activities are best led by industry experts. We welcome views as to whether there is a need for the programme team to facilitate any of these activities.

An installation code of practice

7.20. It is important that customers receive a consistent and positive experience of meter installation, as this will make them more likely to engage with the information available from smart meters and to improve their energy efficiency later. We are proposing that industry develops a code of practice covering service standards for smart meter installation, similar to that developed by the Digital Switchover scheme. This would cover a range of topics including:

- The information that customers can expect to receive about how the meter installation will take place;
- Validation that the correct meter has been installed in the correct property;
- Information provided at the point of installation;
- Sales and marketing activities during the installation visit;

- “Hygiene factors” (e.g. putting back furniture after installation);
- Options for further information and contact details in case things go wrong;
- Additional protection for vulnerable customers (which could include a requirement always to use a pre-arranged appointment for customers on the Priority Services Register); and
- Accessibility requirements for particular customer groups, such as making information on the installation available in large print, Braille and a range of languages.

7.21. We also recommend that a code of practice is developed for smaller non-domestic customers. This would cover similar information to the code of practice for domestic customers but would be tailored to the needs of non-domestic customers. It would include the steps that suppliers would be expected to take in terms of providing advance warning about meter replacement, and minimising business interruptions. Development of these codes of practice should take account of the views of consumer and business groups.

7.22. We propose that these codes of practice will be underpinned by licence obligations and subject to approval by the Authority.

Question 13: Do you agree with our proposal to require suppliers to develop codes of practice around the installation process? Are there any other aspects that should be included in these codes of practice?

Support for vulnerable consumers

7.23. Addressing the needs of vulnerable consumers and the fuel poor resulting from the rollout of smart metering is a priority for the programme. In addition to the code of practice, the programme is considering the scope and mechanism for establishing a dedicated help scheme for vulnerable consumers. This could be similar to the Switchover Help Scheme, which was set up to offer practical help at digital television switchover to older and disabled people. The Switchover Help Scheme offers eligible consumers help to switch one TV set to digital, including equipment, installation and aftercare. It also plays an important role in explaining digital TV simply and clearly and in reaching hard-to-reach customers through links with community groups and local charities. While the challenges in smart metering are different, there are lessons that can be learned from the experience of the digital switchover.

7.24. We are currently considering the options for providing the advice and support that will be needed to help vulnerable consumers realise the benefits of smart metering. Further information on this issue can be found in the “Consumer Protections” supporting document.

Monitoring customers’ experience

7.25. It is in the interests of all stakeholders that customers receive a positive experience of installation. To help deliver this, we believe there would be value in the

programme carrying out (or requiring suppliers to carry out) research into customers' experiences.

7.26. The results would be published and would provide a strong incentive for suppliers to seek to continually improve their performance. Customer satisfaction ratings are already shown on switching websites and are seen to have some impact on customers' choice of energy supplier. This approach is particularly helpful for dealing with some of the "softer" aspects of the customer experience that cannot readily be prescribed through regulation. For example, customers could be invited to fill in a short, standardised feedback form after installation, with anonymous results published. As well as the overall picture this would give, it could also provide early warning if there were some customer groups who were receiving a materially worse service than others, for example.

7.27. There may also be a role for carrying out qualitative work to explore customer experiences in more depth. For example it could be helpful to follow-up any customers who indicate in early feedback that they have had a particularly poor experience to find out why and try and ensure that this is not repeated for other customers. There may also be a role for an annual post-installation survey for a sample of customers. This could provide more detailed information about service standards, allow any areas of poor performance to be investigated, and could provide information on other aspects of the rollout (such as the number of customers still using IHDs sometime after the installation process). Further thought will be given in parallel with this consultation to identify the approach to monitoring the consumer experience.

8. Conclusions and Next Steps

This chapter briefly summarises our proposed approach to mandating the rollout of smart meters. It also sets out activities that are intended to be carried out in subsequent phases of the programme.

Summary of key proposals

8.1. Delivery of the rollout of smart metering in the timescales envisaged is a major challenge. For the programme to succeed it will not be sufficient simply to install smart metering equipment. Consumers also need to be engaged and given the advice and support necessary to help them to manage their energy consumption effectively.

8.2. Our proposed strategy for the delivery of rollout is as follows:

- Providing suppliers with broad flexibility over the pattern of their installations, in the early stages of the rollout at least;
- Establishing clear obligations on suppliers to meet specified rollout targets;
- Regular reporting by suppliers, with publication of reported progress;
- Establishing an industry code of practice around the installation process and with potential additional consumer protection in key areas such as sales during the installation visit;
- A review of suppliers' progress against targets and programme objectives at an appropriate point and, if necessary, modification of the rollout strategy at that time.

Next steps

8.3. The next stage of work in this area will be to define, in more detail, the minimum requirements of the rollout approach and the associated regulatory framework. In parallel with this activity we expect some industry participants to be trialling and installing smart meters and working in early partnerships.

8.4. Going forward, the programme team expects to conduct the following activities:

- **Rollout profile definition** – The programme team will work with industry to identify an appropriate rollout profile for the completion of the smart meter rollout on an ambitious but achievable timescale.
- **Review process definition** – The programme team will work with stakeholders to develop the review process to be used to assess progress with the rollout and the possible measures that could be introduced in later stages to address any issues around the efficiency or effectiveness of the rollout.
- **Regulatory obligations and reporting** - The programme team will look to develop our proposals on the timing and content of information that suppliers would be required to report with regard to the progress they are making.

- **Consumer experience** – The programme team will work with industry and consumer representatives to facilitate the development of codes of practice around the installation visit.
- **Investigating initiatives to promote consumer engagement** – The programme team intends to explore more fully how best to promote consumer engagement, drawing on existing evidence and expert views and considering links with broader energy efficiency initiatives.
- **Industry planning** – we anticipate that a number of activities will need to be undertaken to address a number of specific issues, including planning for prepayment replacement and addressing common technical issues, such as installations in blocks of flats. We expect industry to lead on the set up and operation of these activities and that they will involve consumer representatives where appropriate.

8.5. There will also be a need to amend specific licence conditions and to ensure that the Government has the appropriate range of powers during the course of rollout. The proposed approach to implementing smart metering is covered in more detail in the "Implementation Strategy" supporting document.

8.6. We envisage that discussions on these issues will be taken forward through a number of workshops – to enable broader representation reflecting the breadth of interest in these issues.

Appendices

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Appendix 1 – Consultation Response and Questions

1.1. We would like to hear the views of interested parties in relation to any of the issues set out in this document. When responding please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear who the organisation represents and, where applicable, how the views of members were assembled.

1.2. We would especially welcome responses to the specific questions included in each chapter and that are replicated here. These detailed questions sit behind the more high-level questions contained in the Prospectus.

1.3. We are determined to make progress with implementation of the smart metering rollout as quickly as possible. We are therefore seeking responses to the questions in this document by **28 September 2010**. Responses should be sent to:

- Margaret Coaster
- Smart Metering Team, Ofgem E-Serve
- 9 Millbank, London SW1P 3GE
- 020 7901 7000
- smartmetering@ofgem.gov.uk

1.4. Unless marked confidential, all responses will be published by placing them on the websites of Ofgem (www.ofgem.gov.uk) and DECC (www.decc.gov.uk). Respondents may request that their response is kept confidential.

1.5. Respondents who wish their responses to remain confidential should clearly mark the document(s) to that effect and include the reasons for confidentiality. Respondents are asked to put any confidential material in the appendices to their responses. It would be helpful if responses could be submitted both electronically and in hard copy.

1.6. Individual responses and information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes (these are primarily the Freedom of Information Act 2000 (FOIA), the Data Protection Act 1998 (DPA) and the Environmental Information Regulations 2004).

1.7. In view of this, it would be helpful if you could explain to us why you regard the information you have provided as confidential. If we receive a request for disclosure of the information we will take full account of your explanation, but we cannot give an assurance that confidentiality can be maintained in all circumstances. An automatic confidentiality disclaimer generated by your IT system will not, of itself, be regarded as binding on the Department of Energy and Climate Change or Ofgem. We will process your personal data in accordance with the DPA. In the majority of

circumstances, this will mean that your personal data will not be disclosed to third parties.

1.8. Any questions on this document should, in the first instance, be directed to:

- Margaret Coaster
- Smart Metering Team, Ofgem E-Serve
- 9 Millbank, London SW1P 3GE
- 020 7901 7000
- smartmetering@ofgem.gov.uk

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CHAPTER 2

Question 1: Do you believe that the proposed approach provides the right balance between supplier certainty and flexibility to ensure the successful rollout of smart meters? If not, how should this balance be addressed?

Question 2: Would the same approach be appropriate for the non-domestic sector as for the domestic sector?

Question 3: Is there a case for special arrangements for smaller suppliers?

CHAPTER 3

Question 4: What is the best way to promote consumer engagement in smart metering? As part of broader efforts, do you believe that a national awareness campaign should be established for smart metering? If so, what do you believe should be its scope and what would be the best way to deliver it?

Question 5: How should a code of practice on providing customer information and support be developed and what mechanisms should be in place for updating it over time?

CHAPTER 4

Question 6: Do you agree with the proposed obligation on suppliers to take all reasonable steps to install smart meters for their customers? How should a completed installation be defined?

Question 7: Do you think that there is a need for interim targets and, if so, at what frequency should they be set?

Question 8: Do you have any views on the form these targets should take and whether they should apply to all suppliers?

Question 9: What rate of installation of smart meters is achievable and what implications would this have?

CHAPTER 5

Question 10: Do you have any evidence to show that there are benefits or challenges in prioritising particular consumer groups or meter types?

CHAPTER 6

Question 11: Do you agree with our proposed approach to requiring suppliers to report on progress with the smart meter rollout? What information should suppliers be obliged to report and how frequently?

CHAPTER 7

Question 12: Do you agree that there is already adequate protection in place dealing with onsite security or are there specific aspects that are not adequately addressed?

Question 13: Do you agree with our proposal to require suppliers to develop a code of practice around the installation process? Are there any other aspects that should be included in this code of practice?

Appendix 2 – Supply Chain Implications

1.1. The current gas and electricity metering supply chains have a number of layers of delivery and ultimately are reliant on meter installers. The meter installer may be provided from a range of sources, including being an employee of a meter operator, a contractor to the meter operator or contracted through a third party. Discussions with stakeholders suggest that meter operators would like to retain a reasonably consistent and predictable level of resourcing throughout the rollout. This is due to a number of factors, including:

- Achieving maximum value from the costs of training meter installers;
- Being able to contract for installers over a longer timeframe and achieve reasonable rates;
- Avoiding peaks in workload that require overtime costs, travel costs or short-term contracts; and
- Developing consistency and quality in delivery through resource retention.

1.2. Other stakeholders, in particular the Health and Safety Executive, have expressed concerns that plans that create a specific peak in resource volumes could have a detrimental effect on quality and safety. In particular, this is because it may result in the use of short-term contract staff paid on a piece-rate basis.

1.3. As a result some meter operators have said that they would prefer a flat work profile over five years²². The rollout profile assumed in the updated impact assessment is in line with the proposed staged implementation approach, with mandated rollout commencing in summer 2012 and reaching a maximum volume of 17 per cent per year. This is illustrated in the table below. This profile broadly meets the desire of the industry for a consistent level of resourcing and would require approximately a three-fold increase in meter installation resources.

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Annual rate	6%	14%	17%	17%	17%	14%	6%	4%	2%

1.4. Given the Government's ambition to accelerate the rollout, we will be discussing further with industry what would be an ambitious but achievable set of targets and assumptions around the rollout profile.

1.5. During the period of the rollout suppliers will be conducting meter installations in three broad categories and in the following priority order:

- Replacements - activities to replace existing meters due to age, accuracy and safety;

²² Response from the Association of Meter Operators (AMO) to DECC May 2009 Consultation on Smart Metering for Electricity and Gas

- Consumer pull - installations conducted to meet consumer requests for provision of smart meters (including installations at new properties); and
- Discretionary activity – other installations planned to enable the supplier to achieve its smart meter rollout obligations.

1.6. Discretionary activity is the spare capacity that suppliers have after ensuring their other commitments are met. Suppliers can influence the amount of their discretionary activity to some extent through their replacement policies, consumer targeting and advertising campaigns.

1.7. The current supply chain replaces about 5 per cent of meter stock annually²³. . As the rollout progresses this volume of replacement work will drop due to the increased volume of new meter installations. Thus, as a consequence of an increased installation resource base and reduction in replacement activities, there will be increasing discretionary activity as rollout progresses. The potential volume of discretionary activity is illustrated in the table below:

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Annual rate	6%	14%	17%	17%	17%	14%	6%	4%	2%
Replacement	5%	5%	4%	3%	2%	2%	1%	1%	<1%
Consumer Pull	1%	4%	5%	5%	4%	2%	1%		
Discretionary activity	0%	5%	8%	9%	11%	11%	4%	4%	2%

1.8. This table shows the rate of replacement of meters, an estimate of consumer pull and thus the consequential amount of discretionary activity. This model is based on the assumption that there is no prioritisation of specific consumer groups. We have modelled consumer pull of 15% in the first four years of the rollout. This is on the basis of demand from innovators and early adopters illustrated in general technology adoption curves (as explained in Chapter 2), in the absence of firmer evidence of potential demand.

This model shows that discretionary activity increases significantly during the peak period in the middle stages of the rollout.

1.9. Clearly, the way in which the discretionary activity is carried out will have implications for supply chain costs. While focusing efforts in a local area will allow for some efficiency gains, there may be problems if installers then have to be relocated across the country to cover new areas or new staff recruited. The best way of arranging this is primarily an issue for industry to manage but we will want to explore such issues further as part of the work on setting targets and in considering approaches that might be adapted subsequently to facilitate local co-ordination.

²³ The Association of Meter Operators has identified this as 6 per cent, but this includes demand for prepayment meters, which we address separately as consumer pull.

Appendix 3 – National Awareness Campaign Options

1.1. To help build consumer awareness of smart metering and help deliver the benefits in terms of energy savings, one option that we have considered is the case for a national awareness campaign. Such a campaign could be similar to that required for Digital Switchover for its eight year rollout.

1.2. We believe that the focus of this campaign would be to build consumer awareness and confidence in smart metering, to aid take-up and subsequent use of the information provided. This appendix estimates the costs of such a campaign and a qualitative description of benefits.

Costs and benefits

1.3. In considering the cost for a national awareness campaign we have taken the Digital UK experience as an example. The National Audit Office published a review of "Preparations for Digital Switchover" that explained the role of Digital UK and its planned funding. Comparison with the Digital UK experience suggests that a smart metering national awareness campaign could cost up to £100 million.

1.4. The potential financial benefits of this approach are difficult to quantify. We believe that there are essentially three areas of potential benefits, which are discussed below.

Access rates

1.5. We have received varying information on the current level of access rates for meter installations. Some stakeholders have said that 50 per cent or lower access rates are normal for current meter installations. However, current access rates relate to the like-for-like replacement of an existing meter. Smart meters provide a number of additional benefits but also raise a number of potential concerns and fears for consumers. In addition, consumers will need to be at home to receive the IHD and associated explanation of functionality. Currently in some electrical meter installations it is not necessary to meet the consumer.

1.6. Thus the nature of smart meter installation is different to current meter replacement activities. It is possible that access rates would drop as a consequence of requiring consumers to be in the home and any negative publicity around the programme could lower access rates further. On the other hand, it is possible that clear communication of the benefits could increase access rates.

1.7. In stakeholder meetings the point has been made that the use of a trusted, independent third party could be important in helping build consumer confidence in smart metering. In the case of Digital Switchover, the involvement of the BBC as a trusted body was seen as essential.

1.8. Thus a national awareness campaign could establish the role of a trusted third party, build consumer confidence and thus increase access rates. Higher access rates will result in reduced delivery costs due to fewer wasted visits by installers.

Common link to third parties

1.9. Third parties, such as EST, Citizens Advice Bureaux or local authorities, may be a valuable route for the Smart Metering Implementation Programme to raise awareness. The involvement of these parties would increase consumer trust in the rollout. However, if each of these third parties needed to approach individual suppliers for information then this would place a greater burden on them.

1.10. A national awareness campaign could provide consistent information and material on smart metering for third parties, for example, by providing briefings to the EST, Citizens Advice Bureaux or local authorities, including common information for these third parties to provide to their clients.

Enhanced energy savings

1.11. Currently only 17 per cent of consumers trust their energy suppliers in providing energy efficiency advice.²⁴ Through trusted third parties, such as local authorities, Citizens Advice and the Energy Saving Trust, consumers could receive additional information on energy saving actions and where to go for further advice and support on energy efficiency measures.

1.12. The combination of additional advice from trusted third parties and the national campaign could build consumers' confidence, increasing their interest in energy reduction measures.

²⁴ Survey conducted by Accenture, May 2010.

Appendix 4 – Analysis of Consumer Prioritisation Options

1.1. The programme has considered the potential to prioritise specific consumer groups within the smart meter rollout. Such prioritisation would adjust the overall rollout profile and potentially impact the business case in three ways:

- Changing supply chain costs;
- Changing the consumer benefits profile; and
- Changing the supplier benefits profile.

1.2. To consider each of these aspects we have looked at the supply chain impact of three potential prioritisation scenarios: consumers classified as fuel poor, high consumption consumers and prepayment meter customers. To minimise risk of disruption to the rollout we have based this on the following two principles:

- To provide time to resolve teething problems in the rollout, prioritisation does not commence until at least 18 months after the start; and
- Any prioritisation should not adversely impact the underlying supply chain costs.

1.3. Discretionary activity provides the capability to prioritise consumer groups. This is illustrated by consideration of the consumers classified as fuel poor, which we believe are the largest group that could be considered for prioritisation.

Prioritising the fuel poor

1.4. Households are considered as being in "fuel poverty" if they would have to spend more than 10 per cent of their household income on fuel to keep their home adequately heated.

1.5. In 2007 around 4 million households were estimated as being fuel poor (around 16 per cent of all households)²⁵. It is difficult for energy suppliers to identify customers who are in fuel poverty as it depends on a combination of the customer's income, housing condition and personal circumstances (e.g. whether they are at home during the day and hence how long they need to heat the home for). A proxy measure would be needed but even this is problematic.

1.6. There is currently limited evidence on the benefits that smart meters will bring to fuel poor consumers. It is possible that the introduction of smart tariffs and energy consumption information may enable the fuel poor to reduce costs, or move to different suppliers to achieve savings, but this is not proven.

1.7. A number of stakeholders, including consumer representatives, have expressed concerns that these consumers do not receive smart meters too soon in the rollout.

²⁵ This figure is expected to have increased since 2007.

These stakeholders are concerned that in the early stages of the rollout technical problems and unfamiliarity may place additional burdens on consumers. They also believe that it is important for such consumers to have a support network around them, such as others in their community who use smart meters and who can help them.

1.8. The approach to prioritise such consumers would depend on the rollout model chosen.

- If the rollout was mandated through area-based targets then priority areas would need to be chosen and built into the common plan. This could be achieved by using the Incidence of Multiple Deprivations analysis conducted by the Office of National Statistics. These area-based installations would need the support of local authorities to ensure that there was community engagement and would thus require additional investment beyond smart meter implementation. For fuel poor consumers outside of these areas, there is a role for local authorities and social services to reach out to and help suppliers identify them and encourage them to request smart meters.
- Under the local project model alternative mechanisms are possible. Firstly, the Incidence of Multiple Deprivations analysis could be used to identify local areas with a high level of potential fuel poverty and thus specific projects identified to prioritise these areas. This approach would not include all relevant consumers. Alternatively the proactive involvement of third parties could help target the right consumers. For example, a charity representing fuel poor consumers may request that suppliers support a project that targets its beneficiaries. In return the charity could help the supplier gain access and provide information and support.

1.9. This analysis indicates that there would be capacity to prioritise the fuel poor, whilst still retaining consumer pull, but reducing the volume of discretionary activity.

Prioritisation of high consumption consumers

1.10. Consumer benefits in the rollout relate to the reduction in and time-shift of energy consumption. One way to enhance benefit delivery would be for the rollout to target high energy consumers such as non-domestic consumers in the early stages. There are a number of potential ways to achieve this, including targeting suppliers on the volume of total energy measured through smart meters through to targeting particular consumer groups.

1.11. Such an approach could also have advantages for smart grids because the capability to assess and manage large energy consumers should be beneficial in load management. Non-domestic consumers are a group with high energy consumption. They account for 27 per cent of net benefits but account for only 8 per cent of the meters to be installed. Prioritising non-domestic consumers would be one potential mechanism to prioritise high consumption consumers. This has the potential to deliver benefit more rapidly and contribute to the 2020 carbon reduction target.

1.12. Priority could be given to non-domestic customers in a market-led rollout model by setting interim targets for these customers.

Prioritisation of prepayment consumers

1.13. Prepayment consumers are more aware of their consumption than those on credit payment plans as a result of regularly topping up their meter. Evidence to date has indicated that prepayment consumers are unlikely to make significant reductions in consumption due to smart meters. However, prepayment consumers may benefit from smart metering in other ways:-

- Suppliers may reduce prepayment tariffs due to the reduced costs of managing smart meters;
- Consumers will be able to switch easier between credit and prepayment methods; and
- Consumers would receive a better service with more flexibility in payment methods, including telephone top-up.

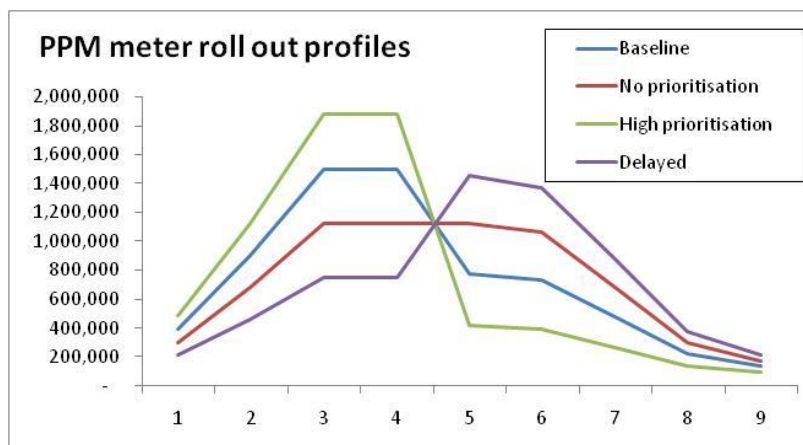
1.14. There is also anecdotal evidence that more consumers may wish to switch to prepayment mechanisms with smart meters, and hence adopt more energy saving measures as a consequence. However, there is insufficient evidence to indicate what the scale of consumer change may be and the potential energy savings as a consequence. The consumer response will be driven primarily by the tariffs offered by suppliers and their associated marketing campaigns.

1.15. The updated impact assessment assumes a slightly faster implementation of prepayment meters than the wider meter stock replacement. The implementation of smart meters for prepayment could be accelerated by setting suppliers a target that accelerates this profile further. Alternatively, without a target, suppliers may choose their own strategies for faster prepayment meter replacement.

1.16. We have considered four different profiles to assess the potential impact of prioritisation on the business case. These profiles are:

- Baseline – the slightly accelerated profile in the 2009 impact assessment;
- No prioritisation – implemented at the same rate as all meters;
- High prioritisation – a more aggressive prioritisation of prepayment meters, with the majority complete by the fifth year of rollout; and
- Delayed – the majority of prepayment meter installations are delayed until the second half of the rollout period.

1.17. These profiles are illustrated in the following graph:



1.18. The estimated change to the benefits case and overall NPV²⁶ is illustrated in the following table:

	Consumer Benefit	Supplier Benefit	NPV ²⁶
No prioritisation	+£13m	-£14m	-£2m
High prioritisation	-£13m	+£14m	+£2m
Delayed	+£26m	-£28m	-£4m

1.19. Overall these profiles make only marginal difference with variation of only £7m on an NPV of almost £6bn. This lack of variation is due to any increase in consumer benefits being balanced by the corresponding decrease in supplier benefits and vice-versa.

1.20. There are potential cost impacts from prioritising prepayment replacement, including the cost on suppliers of system changes and potential increased access costs for reaching more difficult to reach consumers earlier in the process. However, our assessment is that this impact is broadly neutral on costs and is potentially slightly beneficial:

- Suppliers will need to invest in system and process changes for smart prepayment meters irrespective of the implementation profile chosen. This will result in a period of dual running of legacy and new systems and processes during a period of the rollout. Acceleration of smart prepayment meter rollout would shorten this period and thus reduce dual running costs.
- Access rates for prepayment meter replacements are likely to be high. This is for two reasons - the quality of service and potential tariff benefits of smart prepayment meters will mean that consumers have a good incentive to arrange

²⁶ The change to the NPV does equal the sum of changes to the consumer and supplier benefits as there are also some changes to other benefits e.g. losses, theft.

installation; prepayment meter consumers are used to having a metering relationship with their supplier and will be more responsive to contact. Thus it is unlikely that access rates will add significant cost to an accelerated rollout.

1.21. As a consequence of this model we anticipate that the overall impact on the benefit profile of prioritising prepayment meters would be slightly positive.

1.22. Prioritisation of prepayment meters accrues benefits for suppliers. There is a natural incentive for suppliers to wish to prioritise and co-ordinate prepayment meter replacements. In the market-led rollout model, prepayment customers can be prioritised by appropriate interim targets.

Appendix 5 – Glossary

C

Codes

Industry codes establish detailed rules that govern market operation, the terms for connection and access to energy networks. The supply and network licences require the establishment of a number of industry codes that underpin the gas and electricity markets. The electricity codes are: Balancing and Settlement Code (BSC), Connection and Use of System Code (CUSC), Distribution Code, Grid Code, Master Registration Agreement (MRA), System Operator-Transmission Owner Code (STC), Distribution Connection and Use of System Agreement (DCUSA). The gas codes are the Uniform Network Code (UNC), Independent Gas Transporter (IGT) Network Codes, Supply Point Administration Agreement (SPAA).

Consumer

Person or organisation using electricity or gas at a meter point.

Consumer Advisory Group (CAG)

The Consumer Advisory Group consists of members from groups representing a broad range of domestic consumers. It was set up to help inform the programme and to promote understanding of key consumer issues, particularly more complex issues that cannot be fully explored through primary consumer research.

Customer

Any person supplied or entitled to be supplied with electricity or gas by a supplier.

D

DataCommsCo (DCC)

New proposed entity which would be created and licensed to deliver central data and communications activities. DCC would be responsible for managing the procurement and contract management of data and communications services that will underpin the smart metering system.

Department of Energy and Climate Change (DECC)

The Department of Energy and Climate Change (DECC) was created in October 2008, to bring together: energy policy and climate change mitigation policy.

Disability Advisory Forum

A group hosted by Ofgem that is attended by a range of organisations representing the interests of people with disabilities.

E

Electricity meter

A measuring instrument that records the quantity of electricity supplied.

Energy suppliers

A company licensed by Ofgem to sell energy to, and to bill, customers in Great Britain.

F

Feed-in-tariff (FIT)

A feed-in tariff is a policy mechanism which came into effect in April 2010. It is designed to encourage the adoption of renewable energy sources. FITs consist of two elements of payment, made to generators, and paid for by licensed electricity suppliers. The first element is a generation tariff that differs by technology type and scale, and is paid for every kilowatt hour (kWh) of electricity generated and metered by a generator. This generation tariff will be paid regardless of whether the electricity is used onsite or exported to the local electricity network. The second element is an export tariff which is either metered and paid as a guaranteed amount that generators are eligible for, or, in the case of very small generation, assumed to be a proportion of the generation in any period without the requirement of additional metering.

Fuel poverty

Households are considered as being in "fuel poverty" if they would have to spend more than 10 per cent of their household income on fuel to keep their home adequately heated.

G

Gas and Electricity Markets Authority (GEMA)

The Authority is Ofgem's governing body. It consists of non-executive and executive members and a non-executive chair. The Authority determines strategy, sets policy priorities and takes decisions on a range of matters, including price controls and enforcement. The Authority's principal objective is to protect the interests of existing and future consumers in relation to gas conveyed through pipes and electricity conveyed by distribution or transmission systems. The

interests of such consumers are their interests taken as a whole, including their interests in the reduction of greenhouse gases and in the security of the supply of gas and electricity to them. The Authority's powers are provided for under the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998 and the Enterprise Act 2002.

Gas meter

A measuring instrument that records the volume of gas supplied.

H

Home Area Network (HAN)

The smart metering HAN will be used for communication between smart meters, IHDs and other devices in consumers' premises.

I

In-home display (IHD)

An in-home display is an electronic device, linked to a smart meter, which provides information on a customer's energy consumption.

L

Licence

Transporting, shipping and supplying gas; and generating, transmitting, distributing and supplying electricity are all licensable activities. Ofgem grants licences that permit parties to carry out these activities in the GB market. The licenses require the establishment of a number of multilateral industry codes that underpin the gas and electricity markets. Licensees need to be signed up as parties to codes in order to operate in the gas and electricity markets (see [codes](#)).

M

Meter Asset Manager (MAM)

A person approved by the Authority as possessing sufficient expertise to provide gas meter-related services. A gas MAM essentially provides the services that would be provided by a Meter Asset Provider and Meter Operator in electricity.

Meter Asset Manager's Code of Practice (MAMCoP)

The Code of Practice for Gas Meter Asset Managers (MAMCoP) applies to natural gas only. The MAMCoP extends the duties of a MAM. It applies to Independent Gas

Transporters undertaking meter asset management services, as part of a bundled gas transportation business, or MAMs who work on behalf of a gas customer, gas supplier or gas transporter to manage primary meter installations connected to the Network as defined by the Gas Safety (Management) Regulations.

Meter Operator (MOp)

In electricity a MOp is responsible for the installation, commissioning, testing, repair, maintenance, removal and replacement of electricity metering equipment.

Metering Services

The provision to a customer of a meter that meets the prescribed limits for accuracy (currently +2.5% and -3.5%). It includes meter provision and meter operation.

Microgeneration

Microgeneration is the on-site generation of lower carbon heat and power by individuals, small businesses and communities at a small scale.

N

Net Present Value (NPV)

Net present value is the discounted sum of future cash flows, whether positive or negative, minus any initial investment.

Network operators

The companies that are licensed by Ofgem to maintain and manage the electricity and gas networks in GB.

O

Ofgem

The Office of the Gas and Electricity Markets (Ofgem) is responsible for protecting gas and electricity consumers in Great Britain. We do this by promoting competition, wherever appropriate, and regulating the monopoly companies that run the gas and electricity networks.

Ofgem E-Serve

Ofgem E-Serve is responsible for Ofgem's support and delivery functions. It focuses on administering environmental programmes and the delivery of sustainability projects such as the Smart Metering Implementation Programme.

P**Prepayment meter (PPM)**

These are meters that require payment for energy to be made in advance of use or else they will prevent the supply of gas or electricity. A PPM customer pays for energy by inserting electronic tokens, keys or cards into the meter.

Programme

The Smart Metering Implementation Programme.

S**Smart Energy Code**

The proposed new industry Code that will cover both gas and electricity and will contain the detailed regulatory, commercial and technical arrangements applicable to smart metering during rollout and on an enduring basis.

Smart grids

Smart grids, as part of an electricity power system, can intelligently integrate the actions of all users connected to it - generators, consumers and those that do both - in order to efficiently deliver sustainable, economic and secure electricity supplies.

Smart meter

In addition to traditional metering functionality (measuring and registering the amount of energy which passes through it), smart meters are capable of two-way communication allowing them to transmit meter reads and receive data remotely.

V**Value-added services**

Services beyond the 'core services' necessary for the functioning of the smart metering system, which will be enabled by the smart metering infrastructure.

W**Wide area network (WAN)**

The smart metering WAN will be used for two-way communication between smart meters and DCC (via the WAN communications module in the customer's premises).

Appendix 6 – The Authority’s Powers and Duties

1.1. Ofgem is the Office of Gas and Electricity Markets which supports the Gas and Electricity Markets Authority (“the Authority”), the regulator of the gas and electricity industries in Great Britain. This Appendix summarises the primary powers and duties of the Authority. It is not comprehensive and is not a substitute to reference to the relevant legal instruments (including, but not limited to, those referred to below).

1.2. The Authority's powers and duties are largely provided for in statute, principally the Gas Act 1986, the Electricity Act 1989, the Utilities Act 2000, the Competition Act 1998, the Enterprise Act 2002 and the Energy Act 2004, as well as arising from directly effective European Community legislation. References to the Gas Act and the Electricity Act in this Appendix are to Part 1 of each of those Acts.²⁷

1.3. Duties and functions relating to gas are set out in the Gas Act and those relating to electricity are set out in the Electricity Act. This Appendix must be read accordingly²⁸.

1.4. The Authority’s principal objective when carrying out certain of its functions under each of the Gas Act and the Electricity Act is to protect the interests of existing and future consumers, wherever appropriate by promoting effective competition between persons engaged in, or in commercial activities connected with, the shipping, transportation or supply of gas conveyed through pipes, and the generation, transmission, distribution or supply of electricity or the provision or use of electricity interconnectors.

1.5. The Authority must when carrying out those functions have regard to:

- the need to secure that, so far as it is economical to meet them, all reasonable demands in Great Britain for gas conveyed through pipes are met;
- the need to secure that all reasonable demands for electricity are met;
- the need to secure that licence holders are able to finance the activities which are the subject of obligations on them²⁹;
- the need to contribute to the achievement of sustainable development; and
- the interests of individuals who are disabled or chronically sick, of pensionable age, with low incomes, or residing in rural areas.³⁰

1.6. Subject to the above, the Authority is required to carry out the functions referred to in the manner which it considers is best calculated to:

²⁷ Entitled “Gas Supply” and “Electricity Supply” respectively.

²⁸ However, in exercising a function under the Electricity Act the Authority may have regard to the interests of consumers in relation to gas conveyed through pipes and vice versa in the case of it exercising a function under the Gas Act.

²⁹ Under the Gas Act and the Utilities Act, in the case of Gas Act functions, or the Electricity Act, the Utilities Act and certain parts of the Energy Act in the case of Electricity Act functions.

³⁰ The Authority may have regard to other descriptions of consumers.

- promote efficiency and economy on the part of those licensed³¹ under the relevant Act and the efficient use of gas conveyed through pipes and electricity conveyed by distribution systems or transmission systems;
- protect the public from dangers arising from the conveyance of gas through pipes or the use of gas conveyed through pipes and from the generation, transmission, distribution or supply of electricity; and
- secure a diverse and viable long-term energy supply.

1.7. In carrying out the functions referred to, the Authority must also have regard, to:

- the effect on the environment of activities connected with the conveyance of gas through pipes or with the generation, transmission, distribution or supply of electricity;
- the principles under which regulatory activities should be transparent, accountable, proportionate, consistent and targeted only at cases in which action is needed and any other principles that appear to it to represent the best regulatory practice; and
- certain statutory guidance on social and environmental matters issued by the Secretary of State.

1.8. The Authority has powers under the Competition Act to investigate suspected anti-competitive activity and take action for breaches of the prohibitions in the legislation in respect of the gas and electricity sectors in Great Britain and is a designated National Competition Authority under the EC Modernisation Regulation³² and therefore part of the European Competition Network. The Authority also has concurrent powers with the Office of Fair Trading in respect of market investigation references to the Competition Commission.

³¹ Or persons authorised by exemptions to carry on any activity.

³² Council Regulation (EC) 1/2003